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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,530	03/30/2001	Taizo Miyazaki	381NP/49752	1230

23911 7590 01/08/2003

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EXAMINER

WAKS, JOSEPH

ART UNIT PAPER NUMBER

2834

DATE MAILED: 01/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/806,530

Applicant(s)

MIYAZAKI ET AL.

Examiner

Joseph Waks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-11 and 16-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-11 and 16-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 30 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 3, 5, and 6** are rejected under 35 U.S.C. 102(b) as being anticipated by **Frei (US 3,795,816)**.

**Frei** discloses in Figure 1 invention as claimed: an energy generating system comprising a front stage reaction means 6, 24, 25 receiving a raw material in a form of fuel, water and air to selectively generating a reaction product (flue gas that is different from the raw material in combustive property) by receiving mechanical power from the outside from the compressor 16 and pump 21, and a rear stage reaction means 11 receiving the reaction product to generate energy, including the first stage comprising energy converting means 24, 25 converting mechanical energy to electric energy, wherein the front stage reaction means and rear reaction means are connected through each other through a heat transfer means 6.

3. **Claims 1-3, and 5** are rejected under 35 U.S.C. 102(b) as being anticipated by **Wilson (US 4,382,189)**.

**Wilson** discloses in the Figure invention as claimed: an energy generating system comprising a front stage reaction means 13, 15, 17 receiving a raw material in form of water to

generate a reaction product in form of hydrogen (i.e. product being different in combustive property and having higher chemical energy than the raw material) by receiving mechanical power from the outside (i.e. breaking), and a rear stage reaction means 25, 49 receiving the reaction product to generate energy including means 49 converting mechanical energy to electric energy.

4. **Claims 1-3, 6** are rejected under 35 U.S.C. 102(e) as being anticipated by **Rosen et al.** (US 6213,234).

**Rosen et al.** disclose in the Figures 1 and 2 invention as claimed: an energy generating system comprising a front stage reaction means 32 receiving a row material in form of gasoline and air to generate a reaction product in form of hydrogen (the reaction product being different than raw material and having higher chemical energy than the raw material), CO, CO<sub>2</sub> and water by receiving mechanical power from the outside (i.e. pumping and compressing), and a rear stage reaction means 22 receiving the reaction product to generate energy including means converting mechanical energy to electric energy.

5. **Claims 1-3, 5, and 7-11** are rejected under 35 U.S.C. 102(e) as being anticipated by **Sakamoto et al.** (JP 08185880 A).

**Sakamoto et al.** disclose in the Figures 1 and 2 invention as claimed: an energy generating system comprising a front stage reaction means 1 receiving a row material in form of fuel gases, steam and oxygen enriched air to generate a reaction product in form of hydrogen (the reaction product being different than raw material and having higher chemical energy than the raw material), CO, CO<sub>2</sub> and water by receiving mechanical power from the outside (i.e. piston

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11), and a rear stage reaction means 2 receiving the reaction product to generate energy including means converting mechanical energy to electric energy.

Re claim 10, the combined system discloses all features essentially as claimed. However, it fails to disclose the variable drive valve for varying the compression ratio.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 7, 8, 10, 11, and 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rosen et al. (US 6213,234)** in view of **Lowther et al. (US 4,965,052)**.

**Rosen et al.** disclose the system essentially as claimed. However, **Rosen et al.** do not disclose the front stage reaction means being a heating engine.

**Lowther et al.** disclose heat engine used as an "engine reactor" for the purpose of combining hydrocarbons and oxygen or water vapors (Re column 12, lines 17—23) to produced an enriched fuel for other use while simultaneously generating a mechanical output.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the system as taught by **Rosen et al.** and to provide the front stage reaction means in form of the heating engine as taught by **Lowther et al.** for the purpose of simplifying the system by combining the reforming process and power generation in a single machine.

Re claim 10, the combined system discloses all features essentially as claimed. However, it fails to disclose the variable drive valve for varying the compression ratio.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the variable drive valve for varying the compression ratio since it involves a known and commonly practiced method in the art of combustion engines.

8. **Claims 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sakamoto et al. (JP 08185880 A)** in view of **Kato et al. (JP 06219707 A)**.

**Sakamoto et al.** disclose the system essentially as claimed. However, **Sakamoto et al.** do not disclose the system heating and temperature control means.

**Kato et al.** disclose in paragraphs 0013-0016 the means for varying the supply ratio of plurality of raw materials and using the engine compression and ignition for heating and temperature control.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the system as taught by **Sakamoto et al.** and to provide the system heating and temperature control means as taught by **Kato et al.** for the purpose of reaching the self-ignition temperature when the engine is an ignition compression engine.

#### ***Response to Arguments***

9. Applicant's arguments filed on November 12, 2002 have been fully considered but they are not persuasive.

Re claims 1, 5, and 6 in view of Frei.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the reaction

device such as combustion engine normally generating energy and functioning as a reformer) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicants' assumption that each of the components of the front stage reaction means must receive mechanical power from outside is not supported by the claim language that requires only the front stage reaction means to receive the mechanical energy from outside. This limitation is fully met by the Frei's disclosed front stage reaction means 6, 24, 25.

Re claims 1-3, and 5 in view of Wilson.

In response to applicant's argument that the Wilson reference fails to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the means extracting energy from hydrogen and oxygen using cells) are not recited in the rejected claim(s).

Re claims 1-3 and 6 in view of Rosen et al.

The rejections based on Rosen et al. (WO 99/191161) are withdrawn by examiner because they lacking priority over the application. The US Patent No. 6,213, 234 to Rosen et al. that discloses basically the same invention and claims priority to the Provisional Application No. 60/061,817 filed on October 14, 1997 was used instead.

In response to applicant's argument that the Rosen et al. reference fails to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the ability of engine to function as a reformer) are not recited in the rejected claim(s).

Re claims 1-5, 7-9 and 11 in view of Sakamoto et al.

Applicants' argument with respect to rejection of claims as being anticipated by Sakamoto et al. is respectfully traversed by examiner, since no rejection based on anticipation by Sakamoto et al. was made.

Re claims 7-9, 11, and 19-21 in view of Rosen et al. and Lowther et al.

As indicated above Rosen et al. disclose invention as claimed. Thus, the prima face of the combined system is clearly established.

10. Applicant's arguments with respect to claims 1-3 and 6 in view of Rosen et al. (WO 99/191,161) have been considered but are moot in view of the new ground(s) of rejection.

***Communication***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (703) 308-1676. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-1341 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

  
JOSEPH WAKS  
PRIMARY PATENT EXAMINER  
TC-2800

JW  
January 3, 2003